UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2000-0199

September 26, 2000

Mr. Thomas A. Schmidt
Forest Supervisor
Ochoco National Forest
P.O. Box 490
3160 NE 3rd Street
Prineville, Oregon 97754

Re: Formal Section 7 Consultation on the Effects of Proposed Culvert Replacement and Road Closure Projects on Trout Creek, Deschutes River Basin, Oregon

Dear Mr. Schmidt:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) on the effects of the proposed culvert replacement and road closure projects on Trout Creek in the Deschutes River Basin, Oregon. The NMFS concludes in this Opinion that the proposed actions are not likely to jeopardize the subject species or adversely modify critical habitat. As required by Section 7 of the ESA, NMFS included reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are reasonable and appropriate to minimize the impact of incidental take associated with this action.

Please direct any questions regarding this consultation to Ron Lindland of my staff in the Oregon State Branch Office at (503) 231-2315.

Sincerely,

Michael R Crouse

for

Donna Darm
Acting Regional Administrator

cc: Jeff Dillon, U.S. Fish and Wildlife Service
Jim Newton, Oregon Department of Fish and Wildlife

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Proposed Culvert Replacement, Culvert Removals, and Road Closure Affecting Middle Columbia River Steelhead in the Trout Creek Watershed

Lower Deschutes River, Oregon

Agency: Ochoco National Forest

Consultation
Conducted By: National Marine Fisheries Service
Northwest Region

Date Issued: September 26, 2000

TABLE OF CONTENTS

I. BACKGROUND 1

II. PROPOSED ACTIONS 1

III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT 2

IV. EVALUATING PROPOSED ACTIONS 2
A. Biological Requirements 3
B. Environmental Baseline 3

V. ANALYSIS OF EFFECTS 4
A. Effects of Proposed Actions 4
B. Cumulative Effects 5

VI. CONCLUSION 6

VII. CONSERVATION RECOMMENDATIONS 6

VIII. REINITIATION OF CONSULTATION 6

IX. REFERENCES 7

X. INCIDENTAL TAKE STATEMENT 8
A. Amount or Extent of Take 8
B. Effect of the Take 9
C. Reasonable and Prudent Measures 9

I. BACKGROUND

The Ochoco National Forest (ONF) requested formal consultation regarding the potential effects of proposed culvert removal, culvert replacement, and road closure actions in the Trout Creek watershed in a letter dated July 27, 2000. The National Marine Fisheries Service (NMFS) received the request for consultation and a biological assessment (BA) describing the proposed action on July 30, 2000. The BA described the proposed actions and the environmental baseline in the action area, and addressed the effects of those actions on Middle Columbia River (MCR) steelhead and their designated critical habitat in Trout Creek. Trout Creek enters the Deschutes River near River Mile 87.

The MCR steelhead (*Onchorynchus mykiss*) was listed as threatened under the Endangered Species Act (ESA) by NMFS on March 25, 1999 (64 FR 14517). Critical habitat for MCR steelhead was designated on February 16, 2000 (65 FR 7764). The proposed actions are within designated critical habitat for MCR steelhead in Trout Creek.

The objective of this biological opinion (Opinion) is to determine whether the subject actions are likely to jeopardize the continued existence of MCR steelhead or result in the destruction or adverse modification of designated critical habitat for MCR steelhead.

II. PROPOSED ACTIONS

The proposed actions are: 1) Removal of an existing 60-inch round culvert in Trout Creek on Forest Road 2730 (T12S, R18E, Sec 16; approximately two miles upstream from the ONF boundary) and replacement with a larger 50-inch high by 96-inch wide, bottomless-arch (½ round) culvert; and, 2) closure of approximately 3.5 miles of Forest Road 2725-100 which would include removal of two existing 48-inch round culverts from Trout Creek (T12S, R18E, Sec 8; approximately one mile upstream from the ONF boundary). All instream work for both projects would be completed during the Oregon Department of Fish and Wildlife's (ODFW) preferred in-water work period for Trout Creek, which is July 15- October 31. Equipment used to perform the work at both sites will operate from the existing road and the streambank and will not enter the stream. All areas disturbed by construction activities at both project sites will be replanted with native vegetation. Culverts removed at both sites will be hauled off the Forest by Crook County roads personnel, under an agreement with the ONF.

The culvert removal/replacement project on the 2730 Road would entail diversion of water around the site through a trench lined with plastic sheeting, removal of existing fill, removal of the existing culvert, pouring concrete footings on which the new culvert would be placed, replacement of fill over the new culvert, placement of Class 6 riprap material around each end of the culvert, and removal of the temporary diversion to allow water to flow through the newly installed culvert. Any excess fill material will be hauled off-site and disposed of in an appropriate location outside Riparian Habitat Conservation Areas (RCAS).

Closure of approximately 3.5 miles of Forest Road 2730-100 would involve removal of two 48-inch round culverts at the first crossing of Trout Creek. After the culverts are removed, the streambanks will be reshaped to original contours, matted, and seeded. Approximately the first 0.25 mile of the road will be ripped and planted with native shrubs in the spring of 2001. The remainder of the road would be water-barred for proper drainage and left to revegetate naturally.

III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

The listing status and biological information for MCR steelhead are described in Busby et al. (1996) and NMFS (1997). The NMFS designated critical habitat for MCR steelhead on February 16, 2000 (65 FR 7764). The adjacent riparian zone is included in this critical habitat designation. The proposed actions discussed in this Opinion are within the area designated as critical habitat for MCR steelhead.

Trout Creek provides spawning, rearing, and migratory habitat for both adult and juvenile life stages of MCR steelhead. Juvenile MCR steelhead are expected to be rearing in the project areas. Essential features of the adult spawning, juvenile rearing, and adult and juvenile migratory habitat for the species are: 1) Substrate, 2) water quality, 3) water quantity, 4) water temperature, 5) water velocity, 6) cover/shelter, 7) food (juvenile only), 8) riparian vegetation, 9) space, and 10) safe passage conditions (50 CFR 226). The essential features that the proposed projects may affect are substrate, water quality, and riparian vegetation resulting from construction activities.

IV. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the: 1) Definition of the biological requirements and current status of the listed species; and 2) evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: 1) Collective effects of the proposed or continuing action; 2) the environmental baseline; and 3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of

the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed actions, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the actions. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and adult migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline.

A. Biological Requirements

The first step the NMFS uses when applying the ESA section 7(a)(2) to listed steelhead is to define the species' biological requirements that are most relevant to each consultation. The NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list MCR steelhead and designate MCR critical habitat for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing. MCR steelhead survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to reach their ecological function, while at the same time removing adverse impacts of current and past management practices. In conducting analyses of habitat-altering actions and essential habitat elements, NMFS usually defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and utilizes a "habitat approach" to its analysis (NMFS 1999). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

B. Environmental Baseline

The environmental baseline is an analysis of the effects of past and present human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The action area for this

consultation, therefore, includes Trout Creek at the project sites (T12S, R18E, Section 16 and T12S, R18E, Section 8) and downstream (approximately 1 mile) to the ONF boundary.

The current population status and trends for MCR steelhead are described in Busby et al. (1996). According to the BA, the ODFW and the ONF have conducted MCR steelhead redd counts in Trout Creek, including the project area, since 1988. Previous to this year, the highest count had been 59 redds in 1999. In 2000, a total of 461 MCR steelhead redds were counted in Trout Creek survey areas. Trapping of downstream migrant MCR steelhead smolts by ODFW in Trout Creek during the spring of 1998 indicated much higher than normal numbers of outmigrants. In addition, stream flows during the steelhead outmigration period in 1998 were high resulting in good outmigration conditions. Most of the adult MCR steelhead returning to Trout Creek during 2000 would have resulted from the 1998 outmigrants (telephone conversation with Jim Newton, ODFW District Fishery Biologist, August 29, 2000).

Environmental baseline conditions within the action area were evaluated for the subject actions at the project site and watershed scales. This evaluation was based on application of the "matrix of pathways and indicators" (MPI) described in *Making Endangered Species Act Effects Determinations for Individual or Grouped Actions at the Watershed Scale*(NMFS 1996). This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species. An assessment of the essential features of MCR steelhead critical habitat is obtained by using the MPI process to evaluate whether aquatic habitat is properly functioning.

In the Trout Creek watershed, only one (streambank condition) of the 16 habitat indicators in the MPI, for which data is available, were rated by the ONF as properly functioning. Water temperature in Trout Creek is rated as "at risk" for MCR steelhead spawning and "not properly functioning" for rearing. Trout Creek is currently included on the Environmental Protection Agency's Clean Water Act section 303 (d) list of streams for not meeting temperature requirements. Sediment, physical barriers, large woody debris, width/depth ratio, and road density and location indicators were rated "at risk." Nutrients, substrate, pool frequency, pool quality, off-channel habitat, refugia, floodplain connectivity, peak/base flows, and drainage network increase indicators were rated as "not properly functioning." These habitat indicators provide the template for assessing the essential elements of MCR critical habitat.

V. ANALYSIS OF EFFECTS

A. Effects of Proposed Actions

The effects determination on habitat parameters in the BA was made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of the action on them. This process is described in the document *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). This assessment method was designed for the purpose of providing adequate information in a tabular form in BAs for NMFS to determine the

effects of actions subject to consultation. The effects of the actions are expressed in terms of the expected effect (restore, maintain, degrade) on each of 16 aquatic habitat factors in the action area, as described in the "checklist for documenting environmental baseline and effects of the action" (checklist) completed for each action and watershed. The results of the completed checklist for the action provides a starting point for determining the overall effect of the action on the environmental baseline in the action area.

Over the long term, the proposed projects are expected to help restore the sediment, physical barriers, floodplain connectivity, drainage network, and road density indicators. All other aquatic habitat indicators would be maintained. Closure of three miles of the 2725-100 road along Trout Creek will eliminate a chronic source of sediment discharge into the stream, decrease the road drainage network, and decrease the road density in the watershed. Removal of the existing under-sized culvert and replacement with a larger, bottomless-arch culvert on the 2730 Road and removal of the two existing culverts on the 2725-100 Road will improve passage for both juvenile and adult MCR steelhead and improve floodplain connectivity.

In-water work will be needed to place the temporary diversion to divert water around the project site on the 2730 Road, to remove the existing culvert and replace it with a new culvert on the 2730 Road, to remove the temporary diversion, and to remove the two existing culverts on the 2725-100 Road. This in-water work will result in disturbance of stream substrate and a temporary increase in stream turbidity. The temporary increase in stream turbidity could result in temporarily reduced feeding efficiency for juvenile MCR steelhead. There is also the possibility that the excavator could kill juvenile MCR steelhead while performing in-water work. Direct mortality is expected to be minimal, because juvenile fish will likely avoid the equipment and can move freely upstream or downstream from the project sites.

B. Cumulative Effects

"Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area for this consultation includes
Trout Creek at the project sites (T12S, R18E, Section 16 and T12S, R18E, Section 8) and downstream (approximately 1 mile) to the ONF boundary.

NMFS is not aware of any specific future actions which are reasonably certain to occur on non-Federal lands in the Trout Creek watershed. In the past year, NMFS has consulted on several projects to remove "push up" dams and replace them with infiltration galleries on private land along Trout Creek. Several miles of Trout Creek and Tenmile Creek, a major tributary to Trout Creek, have also been improved by excluding livestock use by fencing.

VI. CONCLUSION

NMFS has determined that, when the effects of the culvert removal/replacement and road closure projects addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of MCR steelhead. Additionally, NMFS concludes that the subject actions would not cause adverse modification or destruction of designated critical habitat for MCR steelhead. NMFS believes that the proposed action would cause a minor, short-term degradation of anadromous salmonid habitat due to sediment impacts from construction. These effects will be off set in the long-term through the habitat enhancement activities. Although direct mortality from this project could occur during in-water work, it is not expected, and the level of mortality would be minimal and would not result in jeopardy.

These conclusions are based on the following considerations: 1) All in-water work will be completed during ODFW's preferred in-water work period of July 1-October 31; 2) equipment used to perform the work will operate from existing roads and from the streambank; 3) all disturbed areas will be planted with native grasses, shrubs, or trees upon completion of construction work; 4) best management practices will be implemented to minimize transport of sediment into the stream and to areas downstream from the projects sites both during and after construction; and, (5) the net effect of the proposed actions is expected to be the maintenance and restoration of functional MCR steelhead habitat conditions.

VII. CONSERVATION RECOMMENDATIONS

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS has no additional conservation recommendations regarding the action addressed in this Opinion.

VIII. REINITIATION OF CONSULTATION

Reinitiation of consultation is required if: 1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion; 2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or, 3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). The ONF may also be required to reinitiate consultation if the proposed actions are not consistent with conservation measures developed through the pending consultation on land and resource management plans for Federal land management units in the Mid and Upper Columbia River Basins.

IX. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion in addition to the BA and additional information requested by NMFS and provided by the ONF.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I. V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-27. August.

National Marine Fisheries Service (NMFS). 1996. Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale. NMFS, Environmental and Technical Services Division, Habitat Conservation Branch, 525 NE Oregon Street, Portland, Oregon.

National Marine Fisheries Service (NMFS). 1997. Status Review Update for Deferred and Candidate ESUs of West Coast Steelhead. December.

National Marine Fisheries Service (NMFS). 1999. Endangered and Threatened Species: Threatened Status for Two ESUs of Steelhead in Washington and Oregon. Federal Register. Vol. 64, No. 57, pages 14517-14528. Final Rule.

March 25.

National Marine Fisheries Service (NMFS). 1999. Endangered and Threatened Wildlife and Plants; Definition of "Harm." Federal Register. Vol. 64, No. 215, pages 60727-60731. Final Rule. November 8.

National Marine Fisheries Service (NMFS). 1999. The Habitat Approach: Implementation of Section 7 of the Endangered Species Act fo Actions Affecting the Habitat of Pacific Anadromous Salmonids. Guidance memorandum from Assistant Regional Administrators for Habitat Conservation and Protected Resources to staff. 13 pages. August. NMFS, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232-2737.

National Marine Fisheries Service (NMFS). 2000. Designated Critical Habitat: Critical Habitat for 19 Evolutionarily Significant Units of Salmon and Steelhead in Washington, Oregon, Idaho, and California. Federal Register. Vol. 65, No. 32, pages 7764-7787. Final Rule. February 16.

X. INCIDENTAL TAKE STATEMENT

Section 4 (d) and Section 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering (64 FR 60727; November 8, 1999). Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking

provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of Take

The NMFS anticipates that the subject actions covered by this Opinion have more than a negligible likelihood of resulting in incidental take of MCR steelhead. Some minimal level of incidental take is expected to result from direct mortality or injury to juvenile MCR steelhead during culvert removal and replacement and excavation in the stream channel. The temporary increase in stream turbidity could result in temporarily reduced feeding efficiency for juvenile MCR steelhead. Direct mortality is expected to be minimal, because juvenile MCR steelhead are able to avoid instream construction activities. Effects from turbidity are also expected to be minimal because turbidity levels will quickly return to pre-construction levels once instream work is completed. Because of the inherent biological characteristics of aquatic species such as MCR steelhead, however, the likelihood of discovering take attributable to these actions is very limited. Effects of actions such as those addressed in this Opinion are largely unquantifiable in the short term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, although NMFS expects some incidental take to occur (primarily through harassment) due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take of listed fish at any life stage.

B. Effect of the Take

In this Opinion, NMFS has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead or to destroy or adversely modify designated critical habitat for MCR steelhead when the reasonable and prudent measures are implemented.

C. Reasonable and Prudent Measures

The NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from the actions covered by this Opinion. The ONF shall:

1. Minimize the likelihood of incidental take resulting from in-water work required to complete the projects addressed in this Opinion.
2. Minimize the likelihood of incidental take and impacts on critical habitat resulting from erosion and chemical pollution associated with these projects.
3. Minimize the likelihood of incidental take and impacts on critical habitat resulting from loss of riparian vegetation in the project area.

4. Monitor the effectiveness of the proposed action in achieving the stated purpose and the effectiveness of conservation measures in minimizing take and report annually to NMFS.

D. Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the ONF must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1, above, the ONF shall:

   a. Complete all work below the ordinary high water line within ODFW's in-water work period for Trout Creek (July 1- October 31). Any extensions of the in-water work period will first be approved by and coordinated with ODFW and NMFS prior to implementation.

   b. Operate equipment used to perform the construction work from existing roads or the streambank (equipment will not enter the active stream).

2. To implement reasonable and prudent measure #2, above, the ONF shall:

   a. Divert stream flow around the culvert removal/replacement site on the 2730 Road through a trench lined with plastic sheeting during removal of the existing culvert and installation of the new one. Maintain plastic sheeting to minimize water loss and sedimentation due to erosion.

   b. Locate areas for fuel storage and servicing of construction equipment and vehicles at least 150 feet away from any water body. Appropriate spill containment materials will be available at the project site.

   c. Implement appropriate sediment control measures (e.g. silt fences, straw bales) to minimize sediment transport into the stream channel and downstream from the project sites.

3. To implement reasonable and prudent measure #3, above, the ONF shall:

   a. Minimize disturbance of existing native vegetation at the projects sites. Where possible, native vegetation will be clipped by hand so that roots are left intact.

   b. Reseed and replant all disturbed areas resulting from construction activities at the project sites, where soils are appropriate for a reasonable expectation of success of the plantings, with native grasses, shrubs, and trees where appropriate.

c. Replace failed plantings, if replacement would potentially result in success, or implement alternative measures.

4. To implement reasonable and prudent measure #4, above, the ONF shall:

a. Monitor the success of erosion control measures at the project sites daily during implementation of the projects and on at least three occasions (e.g. one month, six months, and one year), or more often if necessary, after completion of the projects.

b. Monitor the success of plantings at the project sites on at least three occasions (e.g. one month, six months, and one year), or more often if necessary, after completion of the projects.

c. Provide NMFS with a report describing the success of erosion control and restoration plantings within 90 days of project completion.

d. Submit the monitoring report to:

Ron Lindland
Oregon State Branch
Habitat Conservation Division
National Marine Fisheries Service
525 NE Oregon Street, #500
Portland, Oregon 97232-2737